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EXAMINER	
LEE, CHRISTOPHER E	
ART UNIT	**PAPER NUMBER**
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/699,145	KAEWELL ET AL.	
	Examiner	Art Unit	
	Christopher E. Lee	2189	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 May 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☒ The proposed drawing correction filed on *13 May 2003* is: a)☒ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Receipt Acknowledgement

1. Receipt is acknowledged of the Amendment filed on 13th of May, 2003. Claims 1, 4-7, 9, 12-17, 19 and 21-23 have been amended; no claims has been canceled; and no claims has been newly added since the Office Action was mailed on 14th of March, 2003. Currently, claims 1-23 are pending in this application.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 14 and 21-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claim 14 recites the limitation "the controlling step" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim. Therefore, the term "the controlling step" could be considered as --the step of controlling data transfer-- since it is not clearly defined in the claims.

The claims 21-23 recite the limitation "the first station" in lines 6-8 of the claim 21, in lines 1-2 of the claims 22 and 23, respectively, and the limitation "the second station" in lines 10 and 12 of the claim 21, in line 2 of the claims 22 and 23, respectively,. There is insufficient antecedent basis for these limitations in the claim, respectively. Therefore, the term "the first station" could be considered as --the first communication station--, and the term "the second station" could be considered as --the second communication station-- since they are not clearly defined in the claims.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1, 4, 5, 8, 9, 12, 13, 15, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koenig et al. [US 6,101,198 A ; hereinafter Koenig] in view of Applicant Admitted Prior Art [hereinafter AAPA].

Referring to claim 1, Koenig discloses a modem interface (i.e., processor based voice and data TSI system 20 of Fig. 4) for transferring data (See col. 1, lines 4-10) between a first high data rate interface (i.e., T-1 48 of Fig. 4) and a second high data rate interface (i.e., T-1 50 of Fig. 4), said modem interface comprising: a plurality of parallel data highways (i.e., PCM highways 36, 38, 40, 42, 52, 54, 56 and 58 in Fig. 4, in parallel) having frames with time slots for transferring data (See col. 9, lines 38-62), said plurality of data highways outputting (e.g., framing by Framer 60 of Fig. 4) data to said first and second high data rate interfaces (i.e., T-1 48 and T-1 50, respectively, in Fig. 4) in selected time slots (See col. 11, lines 43-50), each data highway being at least partially dedicated to a separate function (See col. 7, lines 14-56; i.e., wherein in fact that (1) two PCM highways (i.e., 36 and 38 in Fig. 4) come from a pair of conventional T-1 lines via conventional framers, which provide signal conditioning and strip the frame bit, (2) the other two PCM highways (i.e., 40 and 42 in Fig. 4) are created by FX cards, which convert a plurality of analog phone lines to digital and multiplex these digital representations, among other things, (3) two of PCM highways (i.e., 52 and 54 in Fig. 4) are connected to the framers, and (4) the other two PCM highways (i.e., 56 and 58 in Fig. 4) connect to FX cards, which demultiplex the signals and convert to analog phone lines implies each data highway being at least partially dedicated to a separate function); at least one of said data highways (e.g., PCM highway 36 in Fig. 4) having an input (e.g., Framer 44 of Fig. 4) configured to receive data from said first high data rate interface (i.e., T-1 48 of Fig. 4) in selected time slots (See col. 11, lines 43-50); at least one of said data highways (e.g., PCM highway 38 in Fig. 4) having an input (e.g., Framer 44 of Fig. 4) configured to receive data from said second high data rate interface (i.e., T-1 50 of Fig. 4); and a processor (i.e., DSP processor 24 of Fig. 4) for controlling data transfer between said plurality of data highways (See col. 11, lines 58-65).

Koenig does not expressly teach said second high data rate interface is a wireless interface.

AAPA discloses a modem interface (See MODEM interface 34 of Fig. 1 and page 1, line 8 through page 2, line 10), wherein said modem interface for transferring data (See page 1, lines 8-10) between an user terminal 46 (Fig. 1) and a second high data rate interface, which is a wireless interface (i.e., wireless air interface 38 of Fig. 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have substituted said wireless interface, as disclosed by AAPA, for said second high data rate interface, as disclosed by Koenig, for the advantage of transferring data between wired components of the network and a wireless communication network (See AAPA, page 1, lines 8-13).

Referring to claim 8, Koenig, as modified by AAPA, teaches said frames have time slots (See the above prior claim 1 rejection), but does not expressly teach said frames have sixteen time slots. However, the claim recites said sixteen time slots without any patentable advantage in the specification (See claim 8 and Application, page 4, line 17). In other words, the Applicant states a preferred frame would have sixteen (16) time slots, which means said specific number of time slots (16) in a frame is chosen among any number of time slots per frame as a preference of one of ordinary skill in the art. Therefore, the limitation of said sixteen time slots in the claim is not patentably significant since it at most relates to the number of time slots in a frame under consideration which is not ordinarily a matter of invention. *In re Yount, 36 C.C.P.A. (Patents) 775, 171 F2.2d 317, 80 USPQ 141.*

Referring to claim 9, Koenig discloses a method for transferring data (See col. 1, lines 4-10) between a first high data rate interface (i.e., T-1 48 of Fig. 4) and a second high data rate interface (i.e., T-1 50 of Fig. 4), said method comprising: a modem interface (i.e., processor based voice and data TSI system 20 of Fig. 4) provides a plurality of parallel data highways (i.e., PCM highways 36, 38, 40, 42, 52, 54, 56 and 58 in Fig. 4, in parallel) having frames with time slots for transferring data (See col. 9, lines 38-62), each data highway being at least partially dedicated to a separate function (See col. 7, lines 14-56;

i.e., wherein in fact that (1) two PCM highways (i.e., 36 and 38 in Fig. 4) come from a pair of conventional T-1 lines via conventional framers, which provide signal conditioning and strip the frame bit, (2) the other two PCM highways (i.e., 40 and 42 in Fig. 4) are created by FX cards, which convert a plurality of analog phone lines to digital and multiplex these digital representations, among other things, (3) two of PCM highways (i.e., 52 and 54 in Fig. 4) are connected to the framers, and (4) the other two PCM highways (i.e., 56 and 58 in Fig. 4) connect to FX cards, which demultiplex the signals and convert to analog phone lines implies each data highway being at least partially dedicated to a separate function); means for inputting (e.g., Framer 44 of Fig. 4) inputs data to said data highways (e.g., PCM highways 36 and 38 in Fig. 4) from said first and second high data rate interfaces (i.e., T-1 48 and T-1 50 in Fig. 4) in selected time slots (See col. 11, lines 43-50); a processor (i.e., DSP processor 24 of Fig. 4) controls data transfer between said plurality of highways (See col. 11, lines 58-65); and means for outputting (e.g., Framer 60 of Fig. 4) outputs (i.e., frames) data to said first and second high data rate interfaces (i.e., T-1 48 and T-1 50, respectively, in Fig. 4) in selected time slots (See col. 11, lines 43-50).

Koenig does not expressly teach said second high data rate interface is a wireless interface.

AAPA discloses a modem interface (See MODEM interface 34 of Fig. 1 and page 1, line 8 through page 2, line 10), wherein said modem interface for transferring data (See page 1, lines 8-10) between an user terminal 46 (Fig. 1) and a second high data rate interface, which is a wireless interface (i.e., wireless air interface 38 of Fig. 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have substituted said wireless interface, as disclosed by AAPA, for said second high data rate interface, as disclosed by Koenig, for the advantage of transferring data between wired components of the network and a wireless communication network (See AAPA, page 1, lines 8-13).

Referring to claims 4 and 12, Koenig teaches said plurality of parallel data highways include three parallel data highways (i.e., N number of parallel data highways; See col. 9, lines 42-51).

Referring to claims 5 and 13, Koenig, as modified by AAPA, does not teach said each of said three parallel data highways has a 2 Mb/s data rate, but Koenig teaches each of said N parallel data highways has a 1.544 Mb/s (See Koenig , col. 9, lines 42-51).

However, the claim recites said 2 Mb/s data rate without any patentable advantage in the specification (See claim 5 and Application, page 4, lines 18-19). In other words, the Applicant states each data highway has an associated maximum data rate, such as 2 Mb/s (See Application, page 4, lines 18-19) for the combined data rate becomes 3 times faster data rate than a single data highway data rate (See Application, page 4, lines 19-21), which means said specific 2 Mb/s data rate is chosen among any data rate of a specific type of data highway for said modem interface (See Application, page 4, lines 21-23). Therefore, the limitation of said 2 Mb/s data rate in the claim is not patentably significant since it at most relates to the data rate of a specific data highway for the data rate matters under consideration which is not ordinarily a matter of invention. *In re Yount, 36 C.C.P.A. (Patents) 775, 171 F2.2d 317, 80 USPQ 141.*

Referring to claim 15, Koenig discloses a radio network terminal (RNT; i.e., processor based voice and data TSI system 20 of Fig. 4) for transferring data (See col. 1, lines 4-10) between a first high data rate interface (i.e., T-1 48 of Fig. 4) and a second high data rate interface (i.e., T-1 50 of Fig. 4), said RNT comprising: an input and an output for transferring data over said first high data rate interface (See T-1 50 and Framers 44 & 60 in Fig. 4); a plurality of parallel data highways (i.e., PCM highways 36, 38, 40, 42, 52, 54, 56 and 58 in Fig. 4, in parallel) having frames with time slots for transferring data (See col. 9, lines 38-62), said plurality of data highways outputting (e.g., framing by Framer 60 of Fig. 4) data to said first and second high data rate interfaces (i.e., T-1 48 and T-1 50, respectively, in Fig. 4) in selected time slots (See col. 11, lines 43-50), each data highway being at least partially dedicated to a separate function (See col. 7, lines 14-56; i.e., wherein in fact that (1) two PCM highways (i.e., 36 and 38 in Fig. 4) come from a pair of conventional T-1 lines via conventional framers, which provide signal conditioning and strip the frame bit, (2) the other two PCM highways (i.e., 40 and 42 in Fig. 4) are

created by FX cards, which convert a plurality of analog phone lines to digital and multiplex these digital representations, among other things, (3) two of PCM highways (i.e., 52 and 54 in Fig. 4) are connected to the framers, and (4) the other two PCM highways (i.e., 56 and 58 in Fig. 4) connect to FX cards, which demultiplex the signals and convert to analog phone lines implies each data highway being at least partially dedicated to a separate function); at least one of said data highways (e.g., PCM highway 36 in Fig. 4) having an input (e.g., Framer 44 of Fig. 4) configured to receive data from said first high data rate interface (i.e., T-1 48 of Fig. 4) in selected time slots (See col. 11, lines 43-50); at least one of said data highways (e.g., PCM highway 38 in Fig. 4) having an input (e.g., Framer 44 of Fig. 4) configured to receive data from said second high data rate interface (i.e., T-1 50 of Fig. 4); and a processor (i.e., DSP processor 24 of Fig. 4) for controlling data transfer between said plurality of data highways (See col. 11, lines 58-65).

Koenig does not expressly teach said second high data rate interface is a wireless interface; and a receiver and a transmitter for transferring data over said wireless interface.

AAPA discloses a modem (MODEM 28 of Fig. 1), wherein said modem for transferring data (See page 1, lines 8-10) between an user terminal 46 (Fig. 1) and a second high data rate interface, which is a wireless interface (i.e., wireless air interface 38 of Fig. 1); and a receiver (i.e., receive circuitry 32 of Fig. 1) and a transmitter (i.e., transmit circuitry 36 of Fig. 1) for transferring data over said wireless interface (See page 1, lines 17-21).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included said transmitter and said receiver, as disclosed by AAPA, in said radio network terminal, as disclosed by Koenig, for the advantage of transferring data between wired components of the network and a wireless communication network (See AAPA, page 1, lines 8-13).

Referring to claim 18, Koenig, as modified by AAPA, teaches said frames have time slots (See the above prior claim 15 rejection), but does not expressly teach said frames have sixteen time slots.

However, the claim recites said sixteen time slots without any patentable advantage in the specification (See claim 8 and Application, page 4, line 17). In other words, the Applicant states a preferred frame would have sixteen (16) time slots, which means said specific number of time slots (16) in a frame is chosen among any number of time slots per frame as a preference of one of ordinary skill in the art. Therefore, the limitation of said sixteen time slots in the claim is not patentably significant since it at most relates to the number of time slots in a frame under consideration which is not ordinarily a matter of invention. *In re Yount, 36 C.C.P.A. (Patents) 775, 171 F2.2d 317, 80 USPQ 141.*

Referring to claim 19, Koenig teaches said plurality of parallel data highways include three parallel data highways (i.e., N number of parallel data highways; See col. 9, lines 42-51).

6. Claims 2, 3, 10, 11 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koenig [US 6,101,198 A] in view of AAPA as applied to claims 1, 4, 5, 8, 9, 12, 13, 15, 18 and 19 above, and further in view of Mergard et al. [US 6,415,348 B1; hereinafter Mergard].

Referring to claims 2, 3, 10 and 11, Koenig, as modified by AAPA, discloses all the limitations of the claims 2, 3, 10 and 11, respectively, except that does not teach said first high data rate interface is an IOM-2 highway or a PCM highway.

Mergard teaches a High-Level Data Link Controller (viz., HDLC controller), wherein Channels of HDLC controller can be coupled to a first high data rate interface (i.e., means for communicating) is an IOM-2 highway or a PCM highway (See col. 1, lines 20-25).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included said HDLC controller, as disclosed by Mergard, in said modem interface, as disclosed by Koenig, as modified by AAPA, for the advantage of providing a broad range of communications applications (See Mergard, col. 1, lines 25-27).

Referring to claim 20, Koenig, as modified by AAPA, discloses all the limitations of the claim 20, except that does not teach said first high data rate interface is an IOM-2 highway.

Mergard teaches a High-Level Data Link Controller (viz., HDLC controller), wherein Channels of HDLC controller can be coupled to a first high data rate interface (i.e., means for communicating) is an IOM-2 highway (See col. 1, lines 20-25).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included said HDLC controller, as disclosed by Mergard, in said radio network terminal, as disclosed by Koenig, as modified by AAPA, for the advantage of providing a broad range of communications applications (See Mergard, col. 1, lines 25-27).

7. Claims 6, 7 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koenig [US 6,101,198 A] in view of AAPA as applied to claims 1, 4, 5, 8, 9, 12, 13, 15, 18 and 19 above, and further in view of Beyda et al. [US 6,058,111 A; hereinafter Beyda].

Referring to claim 6, Koenig, as modified by AAPA, discloses all the limitations of the claim 6 except that does not teach a plurality of read and write devices, each write device fixedly writing to one of said plurality of data highways and each read device reading data from any of said plurality of data highways.

Beyda discloses a network (5000 of Fig. 3) in a system for providing a droppable switched circuit, wherein a plurality of time slot interchangers (i.e., TSIs in Fig.5) comprise: a plurality of read and write devices (i.e., a plurality of TSI input circuits 5200 and TSI output circuits 5600 in Fig. 5), each write device (i.e., TSI output circuit) fixedly writing to one of a plurality of data highways (i.e., fixedly outputting to a group of port controllers among a plurality of port controllers 4000-0 through 4000-31in Fig. 1) and each read device (i.e., TSI input circuit) reading (i.e., inputting) data from any of said plurality of data highways (i.e., inputting from any of port controllers among a plurality of port controllers 4000-0 through 4000-31in Fig. 1). Refer to col. 6, lines 22-26).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined said time slot interchanges (i.e., TSIs), as disclosed by Beyda, in said processor in

said modem interface, as disclosed by Koenig, as modified by AAPA, for the advantage of being required to transmit only $1/N^{th}$ (e.g., $1/8^{th}$) of received data (i.e., received digital words), where N is a number of TSI units (e.g., TSI units) during a given frame (See Beyda, col. 6, lines 27-32).

Referring to claim 7, Koenig, as modified by AAPA and Beyda, teaches said processor (i.e., TSI control circuit 5400 of Fig. 5; Beyda) controls each read device (i.e., TSI input circuit; Beyda) so that each read device reads from a selected one of said data highways (i.e., so that input TSI input circuits' data from a selected one of said data highways via SRC ADRS 5487 of Fig. 5; See Beyda, col. 7, lines 35-41).

Referring to claim 14, Koenig, as modified by AAPA, discloses all the limitations of the claim 14 except that does not teach said the step of controlling data transfer includes using a plurality of read and write devices, each write device fixedly writes to one of said plurality of data highways and each read device is capable of reading data from any of said plurality of data highways.

Beyda discloses a network (5000 of Fig. 3) in a system for providing a droppable switched circuit, wherein a step of controlling data transfer (See Fig. 3 and 5) includes using a plurality of time slot interchangers (i.e., TSIs in Fig.5) comprising a plurality of read and write devices (i.e., a plurality of TSI input circuits 5200 and TSI output circuits 5600 in Fig. 5), each write device (i.e., TSI output circuit) fixedly writes to one of a plurality of data highways (i.e., fixedly outputs to a group of port controllers among a plurality of port controllers 4000-0 through 4000-31in Fig. 1) and each read device (i.e., TSI input circuit) is capable of reading (i.e., inputting) data from any of said plurality of data highways (i.e., inputting from any of port controllers among a plurality of port controllers 4000-0 through 4000-31in Fig. 1). Refer to col. 6, lines 22-26).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined said time slot interchanges (i.e., TSIs), as disclosed by Beyda, in said means for transferring data, as disclosed by Koenig, as modified by AAPA, for the advantage of being required to

transmit only $1/N^{th}$ (e.g., $1/8^{th}$) of received data (i.e., received digital words), where N is a number of TSI units (e.g., TSI units) during a given frame (See Beyda, col. 6, lines 27-32).

8. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koenig [US 6,101,198 A] in view of AAPA as applied to claims 1, 4, 5, 8, 9, 12, 13, 15, 18 and 19 above, and further in view of Rouphael et al. [US 6,301,291 B1; hereinafter Rouphael].

Referring to claim 16, Koenig, as modified by AAPA, discloses all the limitations of the claim 16 except that does not teach said receiver and said transmitter transfer data using QPSK modulation in CDMA format.

Rouphael discloses a wireless communication systems, wherein a receiver (i.e., Receiver 20 of Fig. 1A) and a transmitter (i.e., Transmitter 10 of Fig. 1A) transfer data using QPSK modulation in CDMA format (See Fig. 1 and col. 2, lines 18-42 and col. 3, line 38 through col. 4, line 8).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have applied said QPSK modulation in CDMA format, as disclosed by Rouphael, to said receiver and transmitter, as disclosed by Koenig, as modified by AAPA, so as to modulate/demodulate using QSPK in CDMA format with the advantage of improving data reception (See Rouphael, col. 2, lines 7-13).

9. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koenig [US 6,101,198 A] in view of AAPA as applied to claims 1, 4, 5, 8, 9, 12, 13, 15, 18 and 19 above, and further in view of Cannella et al. [US 5,063,592; hereinafter Cannella].

Referring to claim 17, Koenig, as modified by AAPA, discloses all the limitations of the claim 17 except that does not teach said RNT is operatively coupled to an ISDN terminal via said first high data rate interface.

Cannella discloses a foreign exchange 110 (Fig. 1), wherein an RNT (i.e., switch 112 of Fig. 1) is operatively coupled to an ISDN terminal (i.e., ISDN set 120 of Fig. 1) via a first high data rate interface (i.e., carrier T-1 line 130 of Fig. 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have coupled said ISDN terminal with its ISDN interface, as disclosed by Cannella, to said radio network terminal via said first high data rate interface, as disclosed by Koenig, as modified by AAPA, for the advantages of providing both local (i.e., communication among ISDN terminals via ISDN interface, locally) and said wireless communication service (i.e., foreign exchange services) by said single first high data rate interface (i.e., single subscriber line). Refer to Cannella, col. 2, lines 29-31.

10. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pillan et al. [US 5,483,556 A; hereinafter Pillan] in view of AAPA.

Referring to claim 21, Pillan discloses a method for data compression/decompression for a HDLC type frame (See col. 1, lines 8-9 and col. 2, lines 24-34), comprising: producing data (i.e., deriving a first reduced data frame) having a first high-level data link controlling (HDLC) encoding (See col. 2, lines 55-57) at a first communication station (i.e., EMISSION side in Fig. 4) for transfer over a wireless interface (i.e., transmission network 3 of Fig. 2); encoding (i.e., compressing) said first HDLC encoded data (i.e., said first reduced data frame) into a second HDLC format (i.e., a first compressed reduced data frame) at said first communication station (i.e., EMISSION side) such that said produced data is double HDLC encoded (See col. 2, lines 59-60); transmitting said double HDLC encoded data (i.e., said compressed reduced data frame) over said wireless interface (See col. 2, lines 61-65); receiving (i.e., restoring) said double HDLC encoded data (i.e., said first compressed reduced data frame) at a second communication station (i.e., RECEPTION side in Fig. 4; See col. 2, line 65 through col. 3, line 2); and removing (i.e., decompressing) said second HDLC encoding (i.e., said first reduced data frame) to recover said first

HDLC encoded data (i.e., an original first data frame; See col. 3, lines 3-8) at said second communication station.

Pillan does not expressly teach said method of communicating data over said wireless interface of a wireless communication network having said first communication station and said second communication station.

AAPA teaches a method of communicating data (See Background and Fig. 1) over a wireless interface (i.e., wireless air interface 38 of Fig. 1) of a wireless communication network (Fig. 1) having a first communication station and a second communication station (i.e., Radio Network Terminal 40 and Radio Carrier Station 26 in Fig. 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have applied said method of communicating data, as disclosed by Pillan, to said data communication of said wireless communication network, as disclosed by AAPA, for the advantage of transferring data between wired components of the network and a wireless communication network (See AAPA, page 1, lines 8-13) for complying with a recommendation of reduced transmission line occupancy (See Pillan, col. 1, lines 12-21).

11. Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pillan [US 5,483,556 A] in view of AAPA as applied to claim 21 above, and further in view of Mergard [US 6,415,348 B1].

Referring to claim 22, Pillan, as modified by AAPA, discloses all the limitations of the claim 22 including said first communication station is a radio network terminal (i.e., Radio Network Terminal 40 of Fig. 1; AAPA) and said second communication station is a radio carrier station (i.e., Radio Carrier Station 26 of Fig. 1; AAPA) except that does not teach prior to producing said first HDLC encoded data, receiving said first HDLC encoded data from an IOM-2 highway.

Mergard teaches a High-Level Data Link Controller (viz., HDLC controller), wherein Channels of HDLC controller can be coupled to a radio network terminal (i.e., Radio Network Terminal) is an IOM-2 highway (See col. 1, lines 20-25).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included said HDLC controller, as disclosed by Mergard, in said RNT, as disclosed by Pillan, as modified by AAPA, for the advantage of providing a broad range of communications applications (See Mergard, col. 1, lines 25-27).

Pillan, as modified by AAPA and Mergard, teaches prior to producing said first HDLC encoded data, receiving said first HDLC encoded data from said IOM-2 highway.

Referring to claim 23, Pillan, as modified by AAPA, discloses all the limitations of the claim 23 including said first communication station is a radio carrier station (i.e., Radio Carrier Station 26 of Fig. 1; AAPA) and said second communication station is a radio network terminal (i.e., Radio Network Terminal 40 of Fig. 1; AAPA) except that does not teach prior to producing said first HDLC encoded data, receiving said first HDLC encoded data from an PCM highway.

Mergard teaches a High-Level Data Link Controller (viz., HDLC controller), wherein Channels of HDLC controller can be coupled to a radio carrier station (i.e., Radio Carrier Station) is an PCM highway (See col. 1, lines 20-25).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included said HDLC controller, as disclosed by Mergard, in said RCS, as disclosed by Pillan, as modified by AAPA, for the advantage of providing a broad range of communications applications (See Mergard, col. 1, lines 25-27).

Pillan, as modified by AAPA and Mergard, teaches prior to producing said first HDLC encoded data, receiving said first HDLC encoded data from said PCM highway.

Response to Arguments

12. Applicant's arguments filed on 13th of May, 2003 have been fully considered but they are not persuasive.

In response to the Applicant's argument with respect to "... Because the data highways of the present application can have specific functions, they are different than the PCM highways of Koenig, and therefore, the present application is distinguishable from Koenig. ..." on Response page 19, line 14 through page 20, line 12, the Examiner respectfully disagrees. In contrary to the Applicants' assertion, the PCM highways in the claimed invention do not have a specific function beyond (1) carrying the data to and from the external PCM highway and the PCM highway I (See the Specification, page 5, lines 7-8), (2) carrying the data to and from the digital signal processor and the PCM highway II (See the Specification, page 5, lines 22-23), and (3) carrying the data to and from devices (e.g., the ARM processor, the air interface, ...), and the PCM highway III (See the Specification, pages 6-7). The specific functions stated by the Applicants are not provided by the PCM highways, themselves. Instead, those functions are assigned to the data being carried by each one of the PCM highways, which is the same as the function of PCM highways of the Koenig. In other words, the PCM highways of the Applicants' claimed invention and the PCM highways of the reference Koenig, both of them do not have a specific function beyond carrying the data. Thus, the Applicants' argument on this point is not persuasive.

In response to the Applicant's argument with respect to "... The Examiner's position is that encoding and compressing are equivalent. However, by definition, encoding and compressing are two different concepts. ..." on Response page 21, lines 3-19, the Examiner believes that the Applicants misinterpret the claim rejection. The Applicants essentially argue that the subject matter "encoding" in the claim 21is not equivalent to the subject matter "compressing" of the reference Pillan. Therefore, the claim rejection (See the prior Office Action mailed on 14th of March, 2003, Paragraph 17) under Pillan in view of AAPA should be traversed, according to the Applicants' argument. However, the Examiner's position

is showing the obviousness of the Applicants' claimed invention, such that the subject matter "compressing" of the reference Pillan is enough to show the obviousness of the subject matter "encoding" of the Applicants' claimed invention because "data compressing is accompanied with data encoding" is obvious to one of ordinary skill in the art of data compression at the time the invention was made. Furthermore, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). Thus, the Applicants' argument on this point is not persuasive.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher E. Lee whose telephone number is 703-305-5950. The examiner can normally be reached on 9:00am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark H. Rinehart can be reached on 703-305-4815. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Christopher E. Lee
Examiner
Art Unit 2189

cel/
June 28, 2003

MARK H. RINEHART
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100